

Title (en)
DISTRIBUTED THERMOELECTRIC STRING AND INSULATING PANEL AND APPLICATIONS FOR LOCAL HEATING, LOCAL COOLING, AND POWER GENERATION FROM HEAT

Title (de)
VERTEILTES WÄRMESTROMBAND SOWIE DÄMMPLATTE UND ANWENDUNGEN FÜR LOKALE ERWÄRMUNG, LOKALE KÜHLUNG UND STROMERZEUGUNG AUS WÄRME

Title (fr)
GUIRLANDE THERMOÉLECTRIQUE DISTRIBUÉE ET PANNEAU ISOLANT, ET LEURS APPLICATIONS POUR LE CHAUFFAGE LOCAL, LE REFROIDISSEMENT LOCAL, ET LA PRODUCTION D'ÉNERGIE À PARTIR DE CHALEUR

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Application
EP 11825739 A 20110912

Priority
• US 201161504784 P 20110706
• US 201113101015 A 20110504
• US 201161470039 P 20110331
• US 201161433489 P 20110117
• US 41738010 P 20101126
• US 40321710 P 20100913
• US 2011051227 W 20110912

Abstract (en)
[origin: WO2012037031A1] Inexpensive, lightweight, flexible heating and cooling panels with highly distributed thermoelectric elements are provided. A thermoelectric "string" is described that may be woven or assembled into a variety of insulating panels such as seat cushions, mattresses, pillows, blankets, ceiling tiles, office partitions, under-desk panels, electronic enclosures, building walls, refrigerator walls, and heat conversion panels. The string contains spaced thermoelectric elements which are thermally and electrically connected to lengths of braided, meshed, stranded, foamed, or otherwise expandable and compressible conductor. The elements and a portion of compacted conductor are mounted within the insulating panel. On the outsides of the panel, the conductor is expanded to provide a very large surface area of contact with air or other medium for heat absorption on the cold side and for heat dissipation on the hot side.

IPC 8 full level
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H01C 1/16 (2013.01 - EP US); **H01C 13/02** (2013.01 - EP US); **H10N 10/00** (2023.02 - KR); **H10N 10/17** (2023.02 - EP US); **A61F 2007/0075** (2013.01 - EP); **H01C 1/12** (2013.01 - EP US); **H01C 7/008** (2013.01 - EP US)

Citation (search report)
• [XY] US 2008029146 A1 20080207 - PLISSONNIER MARC [FR], et al
• [Y] US 2858350 A 19581028 - FRITTS ROBERT W, et al
• [Y] US 2009025774 A1 20090129 - PLISSONNIER MARC [FR], et al
• [Y] JP 2003209297 A 20030725 - COMM RES LAB, et al
• [XY] LAUTERBACH C ET AL: "Smart Clothes Self Powered by Body Heat", INTERNET CITATION, 2002, XP002471340, Retrieved from the Internet <URL:http://www.future-shape.com/publications.html> [retrieved on 20080303]
• See also references of WO 2012037031A1

Cited by
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